DOCKET FILE COPY ORIGINAL

January 19, 2004

Ms. Marlene H Dortch
Secretary, Federal Communications Commission
445 12th St. S W
Washington DC 20554

Re: MM Docket 86-440

Dear Ms Dortch

I, Sid Shumate, owner of a residence in Charlottesville, Virginia, and owner of the Givens & Bell division of Blue Ridge Video Services, hereby submit the enclosed Informal Objection to the grant of BMPCT-20031219AAK.

I certify that I am mailing or hand-carrying true copies to the following interested parties:

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Principal Owner, Givens & Bell Division of Blue Ridge Video Services

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Before the

Federal Communications Commission
Washington, D.C. 20554

In re Applications and Amendments of	)	MM DOCKET NO. 86-440
	)	
Charlottesville Broadcasting Corporation	)	File No. BMPCT-20031219AAK
	)	
For Modification of Construction Permit	)	File No. BMPCT-20030407AAM
For A New TV Station on Channel 19	)	
At Charlottesville, Virginia	)	File No BPCT-19860410KP

January 19,2003

Ms Ms Marlene H Dortch
Secretary, Federal Communications Commission
445 12th St S W
Washington DC 20554

Re. MM Docket 86-440, and application and amendment BMPCT-20031219AAK

Dear Ms Dortch:

The following comments are being filed with the Federal Communications Commission (the Commission) as an "informal objection" as per Commission Rules and Regulations Section 73 3587 I submit this informal objection in regards to the "Application for Modification of Construction Permit"(New Application), that was filed by the Charlottesville Broadcasting Corp (CBC), accepted for filing on January 6, 2004, and assigned file number BMPCT-20031219AAK.

These applications seek to modify existing construction permit BPCT-19860410KP, a construction permit granted on August 15, 2001, pursuant to a Memorandum Opinion and Order, FCC 00-149, Adopted on April 19, 2000 and Released on April 28, 2000, granting, with special conditions and by motion of the commission, a modified construction permit to build a commercial television station on Ch. 19, assigned to Charlottesville, Virginia, to a newly created entity named Charlottesville Broadcasting

Corporation (CBC), formed from the joining of two applicants, Achernar Broadcasting Company and Lindsay Television. This Order was intended to terminate a two-decade long adjudicatory proceeding, MM Docket No 86-440

CBC subsequently submitted an application to modify this construction permit. I submitted an informal objection CBC has now come before the Commission with a new "instant" application to modify this construction permit The submission of, and the following issues raised by, this new Application and Amendment, serve to continue to keep open MM Docket NO 86-440

First, I wish to commend the CBC for addressing, in submitting this new application, the objections I raised in my May 9,2003 informal objection. This informal objection was submitted in opposition to the "Application for Modification of Construction Permit"(Application), that was filed by the CBC, and assigned File No. BMPCT-20030407AAM, and the associated "Amendment to Application for Modification of Construction Permit" (Amendment), submitted on April 24, 2003

However, there are serious flaws in the New Application, all regarding inadequate showings One set of flaws represents a new issue, a failure to comply with the rules and regulations of the Federal Communication Commission (the Commission) with regard to RF exposure and protection of the general public

The second flaw revisits a old issue, which I previously addressed with regard to the existing construction permit, File No BPCT-19860410KP, in a letter dated May 25, 2000, submitted in re: FCC Proceeding 86-440

There is also a minor error; as found on the FCC's website CDBS access, Section III-C of the New Application, line 6, states that the Height of Radiation Center Above Mean Sea Level is 427 1 meters, this appears to be a typo, as the records for this tower, ASR # 1018222, state that 427 1 m AMSL is the ground level at the base of the tower I will assume that the statement on the cover page of Exhibit 30, the Engineering Statement, which states "RC 517.6 m AMSL" is correct

Therefore, this continuation of my informal comment opposes this New Application on the following grounds·

1 The new Application fails in two ways to comply with section 1 1310 of the Commission's Rules ("Rules")

(a) The showing in the "Engineering Statement, Proposed Modification of Construction Permit, Charlottesville Broadcasting Corp." ("Engineering Statement") submitted as Exhibit 30, in the "RFR Analysis" section, makes a showing only with regard to the signal from the proposed construction permit, and only with regard to the power level reaching the ground directly below the antenna This relatively short tower, with all appurtenances only 90.5 meters tall, also supports the active transmitting antennas for WHTJ (TV), a full power Ch.

41 UHF television station, the transmitting antenna for W50CM, the Ch 50 translator for WVPT, and the STA DTV transmitter for WHTJ. WHTJ also holds a construction permit, File No BPEDT-20000501AHA, for WHTJ-DT. Therefore, there are already several significant existing sources of RF energy, both licensed and operating, and permitted, on this tower. This tower is also located within a short distance from several other towers on this mountaintop, many of which also support other full power broadcast licensees, including a 5,000 kilowatt ERP omnidirectional UHF TV station (WVIR-TV), and several full power FM radio stations Other nearby transmitters on this mountaintop include a UHF TV translator, a Class A TV station, FM translators, Cellular telephone arrays, a wireless cable (MMDS and LMDS) operation, and numerous two way radio installations.

On page 33, OET Bulletin 65 states " Therefore, at multiple-transmitter sites, all significant contributions to the RF environment should be considered, not just those fields associated with one specific source "

Therefore, for CBC not to first calculate a showing of the cumulative existing emissions of the existing and permitted multiple transmitters located on and adjacent to the tower on which they propose to relocate to, and, second, to then add the contribution of the proposed modified construction permit, is wholly inadequate Based on the above stated facts alone, there is a high probability that CBC should have obtained calculated results at the base of the tower that would result in their being required to prepare and submit an Environmental Assessment, and to undergo environmental review by Commission staff. For more information, I refer to Section II, Background, of the "Notice of Apparent Liability for Forfeiture" Adopted October 20, 2003 (FCC 03-258) with regards to an excellent summary of the current requirements, expectations, and enforcement of the Commission's Rules regarding multiple RF sources and RF exposure, as they apply to licensees, permittees, and applicants

Also, CBC's statement, in the Engineering Statement, that they would take RFR measurements, is inadequate, as measurements made prior to the activation of the two DTV full power construction permitted facilities, one of which is on the same tower, and one on a tower approximately 200 meters away, would significantly under-measure the full potential licensed and permitted RF exposure threat.

(b) In addition to the above routine requirements, there is a special case to consider: the combination of circumstances at this location, including: (a) the extremely low radiation center above ground level (RCAGL) of the New Application, (b) the aim of the primary lobe of the antenna, (c) the other RF sources on this tower, (d) the location of the existing tower they propose to relocate to, and (e) its relationship to the local terrain and rights-of-way. Therefore, in this case, it is necessary to consider not just the amount of power reaching the ground at the CVETA tower base, but along a line between the CVETA tower and the WVIR-TV tower, and the surrounding

area, as this area is crossed by established rights-of-way, and is also a commercial orchard This orchard, the "Carter's Mountain Orchard, occupies the ridge of Carter's Mountain, and surrounds the WVIR-TV transmitter site. It also extends down the mountain, approaching the CVETA tower site RF exposure risk at this site includes the passersby on the right of way, technicians who maintain the multiple transmitter sites on this mountaintop, orchard workers, including migrant workers in season, and the general public who are attracted to this orchard to "pick their own" apples during harvest season

2 The existing construction permit was granted by executive order of the Commission, bypassing engineering review This New Application again proposes, as does the existing construction permit, to transmit utilizing a side mounted antenna, without providing an adequate showing, or, in fact, any showing, as to how the normal signal scattering effect resulting from the side mounting of a slotted line UHF television antenna on a wide-faced metal latticework tower will affect (i e. increase, by negating the positioning of the normal antenna null toward Green Bank) the signal strength transmitted toward the NRAO facility at Green Bank, West Virginia. Nor does it provide any showing of how this scattering effect will be compensated for.

Therefore, the New Application fails to adequately show, as did the existing construction permit, that the proposed modified construction permit can be built in a manner which does not violate the terms of the "Agreement" and "Supplement to Agreement" signed in September, 1997, by the National Radio Astronomy Observatory (NRAO), Achenar Broadcasting Company and Lindsay Television, and submitted to the Commission as a part of the "Supplement to Joint Petition for Approval of Settlement Agreement, for Leave to Amend Application, and for Immediate Grant of Construction Permit" received by the Commission on June 24, 1998, as a part of the proceeding under Docket MM 86-440 Therefore, this application fails to provide a full and adequate showing that it can provide "equivalent protection" The Commission's grant by motion of the existing construction permit was based in part upon the existence of, and continued compliance with, this agreement

I own a residence within the city limits of Charlottesville, Virginia, and work as a Broadcast Engineering Consultant A significant part of my employment includes site visits across the United States, including inspecting ongoing construction of transmission facilities, and preparing full appraisals of radio and TV stations. I have myself stood several times in the past two years, at the location on Mt Wilson, California, on a paved driveway a few feet to the north of the Mt Wilson post office, where the Commission recently cited several radio and TV stations for exceeding, in combination, the allowable maximum permissible exposure levels for the general public Having previously served as Director of Engineering for WVIR-TV for more than 15 years, I visit this mountaintop

regularly I do not wish to see the same situation found at Mt. Wilson, recreated on Carter's Mountain

Prior to the grant of the existing construction permit by the Commission, Achenar Broadcasting Corporation, Lindsay Television, and the combined entity, CBC, were provided an exceptional amount of time and opportunity to properly prepare the engineering for the existing construction permit They have now submitted two subsequent, applications, both faulty, for modification of this existing construction permit

Therefore, for (1) the benefit of those who maintain facilities on Carter's Mountain, those who work in the surrounding Orchard, and for the general public who may visit and pass by, as well as (2) for proper protection of the NRAO, I ask the Commission to reject the CBC's New Application.

And again, due to the exceptional circumstances under which the existing construction permit was granted, I also recommend to the Commission that they amend their existing Memorandum Opinion and Order, FCC 00-149, to clearly and specifically state that no new applications for modification of the existing CBC construction permit will be accepted for filing that do not provide a full and adequate showing of compliance with the provisions of the existing protection agreement with the NRAO.

In order to provide full disclosure, I state that I am also the principal owner of Blue Ridge Video Services, and the Givens & Bell division of Blue Ridge Video Services. Givens & Bell has previously applied to construct a Ch. 64 television station in Charlottesville, and has previously submitted comments and petitions in proceeding 86-440.

Sincerely yours,

Sidney E Shumate

Engineering Exhibit I.

A Calculated Analysis of the total expected RF Power Density at the base of the Central Virginia Educational Television Authority (CVETA) tower on Carter's Mountain, and along a line extending from the CVETA tower to the WVIR-TV main tower, resulting from the existing and proposed Emissions of Multiple Transmitters on the on Carter's Mountain.

Sidney E. Shumate

January 19, 2004

A Calculated Analysis of the total expected RF Power Density at the base of the Central Virginia Educational Television Authority (CVETA) tower on Carter's Mountain, and along a line extending from the CVETA tower to the WVIR-TV main tower, resulting from the existing and proposed Emissions of Multiple Transmitters on the on Carter's Mountain.

The following Engineering Exhibit presents a calculated analysis of the RF Power Density resulting at a specific location, from the combination of the emissions of several existing, permitted, and proposed transmitters located on the Central Virginia Educational Television Authority (CVETA) tower (ASR # 1018222) located on Carter's Mountain, Virginia The selected "specific location" is the base of the WVIR-TV main tower, (ASR # 1018767), located atop the ridge of Carter's Mountain, and adjacent to a existing, recorded Right of Way, and also located in the midst of a commercial apple orchard.

I. Background:

The WVIR-TV main tower, located at the WVIR-TV main transmitter site, is located atop the ridge of Carter's Mountain, on the south end of the Carter's Mountain Orchard. A recorded Right of Way, extant and in use for many decades, passes by this site. This right of way starts on the north at Va State Route 53, at a point south of the Michie Tavern and approximately ¾ mile east of Va. State Route 20, and extends up the mountain, reaching, and then following south, the ridge of the mountain. This right of way passes by the WVIR-TV main tower, as well as several other towers located along the ridge of Carter's Mountain, and ends at an old Virginia State Forestry observation tower site This site is now utilized, as is the old observation tower, as a two-way radio relay site for the Forestry Service and local safety services This right of way is the subject of a easement agreement, recorded at the Albemarle County Courthouse, between the Virginia State Forestry Department and the owners of the Carter's Mountain Orchard. As a result of this easement, the Virginia State Forestry Department incurred an obligation to construct and maintain this roadway In addition, as a result of a settlement

of an encroachment suit, the owners of the Carter's Mountain Orchard also provide basic right-of-way access to the owners, and their lessees, of the adjacent parcel of land on which is located the CVETA Carter's Mountain tower (CVETA tower). This access is provided via a short, unpaved access road that starts at the main Right of Way, adjacent to, and south of, the WVIR-TV main tower, and proceeds down the hill to the west-southwest, to the CVETA tower site

II. Preliminary Calculations:

The base, at ground level, of the CVETA tower is located 197.65 meters away from, and 17 9 meters below, the ground level at the base of the WVIR-TV main tower. The angle of a horizontal line from the CVETA tower to the WVIR-TV main tower is 81.03 degrees true.

The antenna chosen for use by CRC is a medium-priced, side-mounted UHF slot antenna For the purposes of this calculation, and based on the discussion in Section 3, Television Broadcast Antennas, of Supplement A to OET Bulletin 65, I choose to use a average field factor of 2 for my calculation

I also chose to use a .2 field factor for the side-mounted LPTV antenna used by W50CM, the proposed side mount antenna for WHTJ-DT, and the proposed side mount antenna for WVIR-DT. I choose a .10 field factor for the top mounted Bogner (medium-priced and medium-quality) antenna utilized by WHTJ, and a .05 field factor for the top mounted, high quality. Dielectric antenna utilized by WVIR-TV

II. RF Power Density Calculations:

From all of the sources of transmitted RF energy on Carter's Mountain, I have selected only the following licensed, permitted, and proposed sources as relevant for this study

WHTJ

WHTJ-DT

W50CM

WVIR-TV

WVIR-DT

This study does not include the existing, special temporary authorized (STA) DTV transmitting facilities associated with WHTJ and WVIR-TV

The formula used by CBC is formula (10), taken from page 23 of OET Bulletin 65 It is appropriate for use with a digital television (DTV) station whose ERP is specified in average power, only; I will therefore use it for WHTJ-DT and WVIR-DT only This formula is not the correct formula to use with an analog (NTSC) television station. The correct formula for use with an analog television station is specified as formula (2) from page 30 of the Supplement A to OET Bulletin 65, Section 3, Television Broadcast Antennas

Therefore, I correct, continue and extend the calculation provided in the Engineering Statement, using more appropriate formulas and relative field ("F") factors, and obtain the following results

At CVETA tower base

		S=power density in uw/cm^2								
Existing Stations On CVETA tower	ERP (visual) kW	ERP combined and adj kW	RCAGL (meters)	"R" Distt To CVETA tower base (meters)	TV Ch	freq (in MHz)	"F" relative field factor	"S" in uw/cm^2	PDEL* in uw/cm^2	Contrib as a % of PDEL*

WHTJ	251	125 5	85	85	41	633 25	0 1	5 8	422 2	1 4%
W50CM	36 6	18 3	65 7	65 7	50	687 25	0 2	5 7	458 2	1 2%
Permitted station										
WHTJ-DT	340	340	72	72	46	663 25	0 2	87 6	442 2	19 8%
Contribution by existing nearby station										
WVIR-TV	5,000	2500	85	222 8	29	561 25	0 05	4 2	374 2	1 1%
Contribution by permitted nearby station										
WVIR-DT	1,000	1,000	83 4	222 1	32	579 25	0 2	27.1	386 2	7 0%
Proposed additional contribution by CBC:	1000	500	46 8	46 8	19	501 25	0.2	305 0	334 2	91 3%
Subtotal								435.4		

*PDEL is power density exposure limit applicable to the particular transmitter for 300-1500 MHz, PDEL=(frequency)/1500

Therefore, the combined predicted S from the significant sources above, results in a higher S than shown by CBC, one equal to 435 uw/cm^2 This level is above the General Population/Uncontrolled Exposure limits for this combination of frequencies and powers.

From the % of PDEL, it can be seen that if the proposed construction permit modification by CRC is granted, as per OET Bulletin 65, all licensees of RF sources with a PDEL of 5% or more, namely the licensees of WHTJ-DT, and of WVIR-TV, and CRC, will be held liable in conjunction with regard to any RF exposure problem created by the combination of the signal strengths of all RF sources at these locations

The RF power density levels calculated here are, if anything, conservative on the low side, by comparison, Table 9 of Supplement A to OET Bulletin 65 states that a single

UHF antenna should have, at channel 19 and 1,000 kilowatts ERP, a minimum radiation center above ground level of at least 225.2 meters to provide compliance with FCC limits for general population/uncontrolled, and of 100 7 meters for occupational/controlled

Using the above calculation methods, I also calculated the RF power density at ground level, calculated at ten-meter intervals, from the CVETA tower to the WVIR-TV tower. The results are

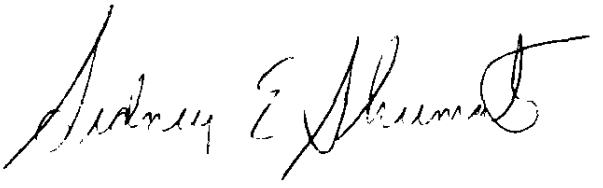
Along a line from the CVETA tower to the WVIR-TV tower

Distance From CVETA tower	Distance From WVIR-TV tower		Total "S" here, in uw/cm^2	Contribution from proposed CRC cp mod
0 0		197 65	435 4	305.0
10 0		187 65	436 1	302 4
20 0		177 65	409 6	276.0
30 0		167 65	366.1	235 1
40 0		157 65	319 4	192 6
50 0		147 65	278 2	155 7
60 0		137 65	244 7	125.7
70 0		127 65	219 0	102 1
80 0		117 65	200 7	84 0
90 0		107 65	188 2	69 7
100 0		97 65	180 9	58 5
110 0		87 65	178 2	49.6
120 0		77 65	179 5	42.5
130 0		67 65	184 4	36 9
140 0		57 65	192 4	32 2
150 0		47 65	202 8	28 3
160 0		37 65	214 9	25 1
170 0		27 65	227 5	22 3
180 0		17 65	238 7	20 0
190 0		7 65	247 1	18 1
197 7		0 00	250 1	16 7

Therefore, the general population/uncontrolled limits are not met for a distance of at least 35 meters toward the WVIR-TV antenna, this places excessive RF exposure well into the apple orchard property The high RF exposure levels affect the access road to this site, which winds around the tower base And this study does not include all nearby RF energy sources Therefore, CBC must be required to submit an Environmental Assessment

Certification

I hereby certify that the engineering statements above are true and correct to the best of my knowledge I am a graduate electrical engineer and a licensed General Class Radiotelephone Operator, with more than 20 years experience in the design, engineering, construction and operation of television transmission facilities in and near the NRAO quiet zone. My work has often appeared before the Commission, and my qualifications are a matter of record with the Commission.



Sidney E Shumate
January 19, 2004

Engineering Exhibit II:

Comments regarding
the scattering effect of side-mounting a UHF television transmitting antenna
on a wide-face latticework tower structure.

Sidney E Shumate

January 19, 2004

Engineering Exhibit II.

Comments regarding
the scattering effect of side-mounting a UHF television transmitting antenna
on a wide-face latticework tower structure.

Charlottesville Broadcast Corporation (CBC) has recently filed with the Federal Communications Commission, a new "Application for Modification of Construction Permit"(New Application). This application was accepted for filing on January 6, 2004, and assigned file number BMPCT-20031219AAK.

The existing construction permit was granted by executive order of the Commission, bypassing engineering review This application attempts to use the same technical method utilized in the existing construction permit, in order to provide second flaw revisits a old issue, which I previously addressed with regard to the existing construction permit, File No BPCT-19860410KP, in a letter dated May 25, 2000, submitted in re: FCC Proceeding 86-440

The existing construction permit was granted by executive order of the Commission, bypassing engineering review. It was granted subject to an "Agreement" and "Supplement to Agreement" signed in September, 1997, by the National Radio Astronomy Observatory (NRAO), Achenar Broadcasting Company and Lindsay Television, and submitted to the Commission as a part of the "Supplement to Joint Petition for Approval of Settlement Agreement, for Leave to Amend Application, and for Immediate Grant of Construction Permit" received by the Commission on June 24, 1998, as a part of the proceeding under Docket MM 86-440

This new application, as did the existing construction permit (but not the earlier application for construction permit submitted in April of 2003), proposes to provide "equivalent protection" by means of aiming a normal null in the antenna pattern toward the NRAO facility in Green Bank, West Virginia In addition, this new permit proposes to relocate the CBC antenna to the same tower formerly occupied by the Ch. 19 translator antenna, reduces power to an ERP of 1,000 kilowatts, utilizes a -1% electrical beam tilt

But it still proposes to use a side mounted, standard design, slotted cylinder UHF transmitting antenna. This New Application again proposes, as does the existing construction permit, to transmit utilizing a side mounted antenna, without providing an adequate showing, or, in fact, any showing, as to how the normal signal scattering effect resulting from the side mounting of a slotted line UHF television antenna on a wide-faced metal latticework tower will affect (i e increase, by negating the positioning of the normal antenna null toward Green Bank) the signal strength transmitted toward the NRAO facility at Green Bank, West Virginia. Nor does it provide any showing of how this scattering effect will be compensated for Therefore, this application fails to provide a full and adequate showing that it can provide "equivalent protection".

The New Application and its associated Exhibit 30, (Engineering Statement) give no detail of the mounting support structure, nor any detail of the proposed mounting position and alignment of the antenna pattern with respect to the existing Rohn custom-fabricated, non-standard size, hollow-leg steel latticework tower structure

Therefore, the application presents inadequate information to allow an independent analysis of the scattering effect of the tower reflections, on the depth of the null of this antenna.

The New Application states that it proposes an ERP of 14.4 kW in the direction of the observatory of the allowed 22 kW ERP under the equivalent protection agreement. This

application claims, therefore, to transmit only 65 45% of the allowable ERP toward the observatory, a power reduction of 1 84 dB, or a reduction in field strength of 3 68 dB

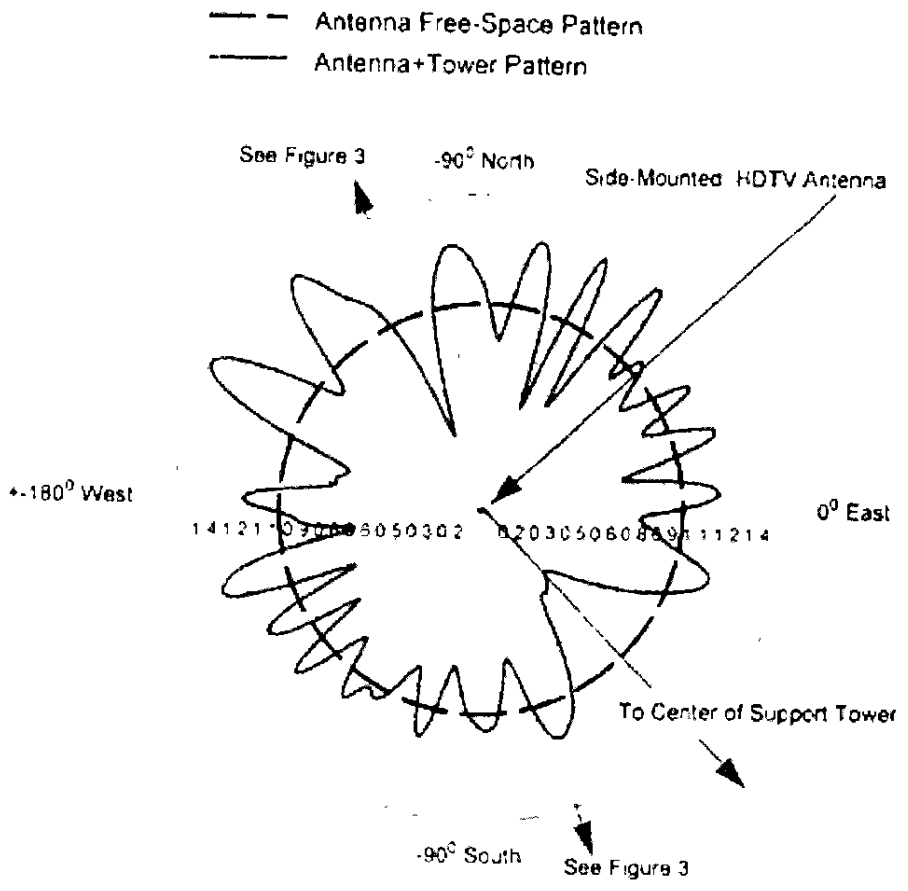
I again submit the attached diagrams, taken from a SCALA Electronics advertisement, and a Dielectric white paper, showing the significant, and sometimes severe, effects of side mounting antennas on the standard antenna pattern These can be calculated, but it requires access to adequate information regarding the mounting structure details, and the alignment of the antenna with regard to the tower, and information regarding the cross-section of the tower, all of which are missing from the Engineering Statement

Certification.

I hereby certify that the engineering statements above are true and correct to the best of my knowledge I am a graduate electrical engineer and a licensed General Class Radiotelephone Operator, with more than 20 years experience in the design, engineering, construction and operation of television transmission facilities in and near the NRAO quiet zone My work has often appeared before the Commission, and my qualifications are a matter of record with the Commission

Sidney E Shumate
January 19, 2004

Figure 2: RELATIVE FIELD OF HDTV ANTENNA AT MIDBAND OF CHANNEL 38



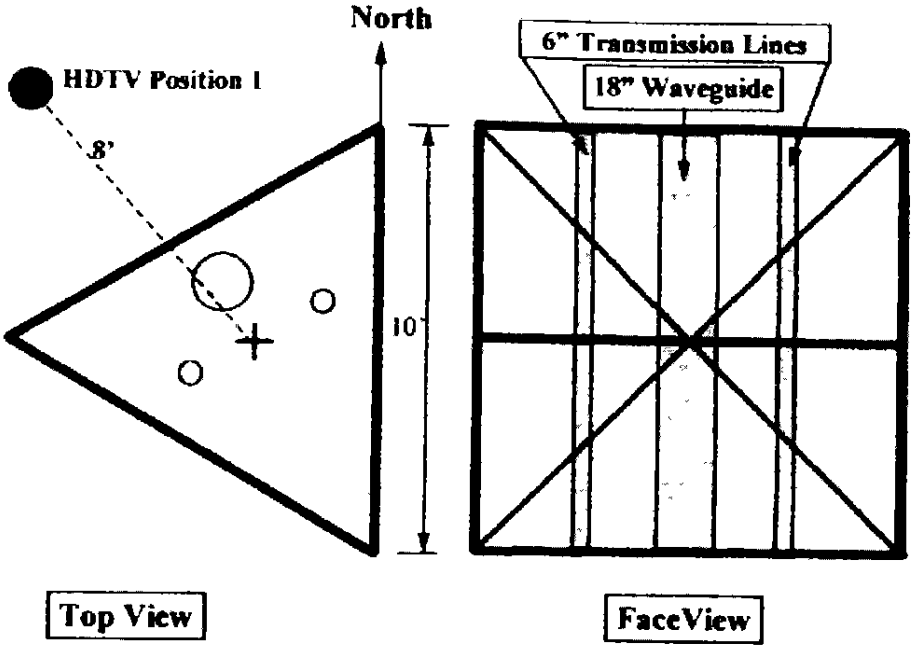


Figure 1: HDTV ANTENNA POSITIONING RELATIVE TO TOWER CONFIGURATION

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